What Is Claimed Is:

1. A longitudinal displacement unit for a torque transmitting shaft assembly comprising:

a sleeve member (11);

a journal (21) coaxially located within said sleeve (11);

a plurality of torque transmitting balls (31) acting between said sleeve (11) and said journal (21);

a ball cage (41) between the sleeve (11) and journal (21) fixing the balls (31) in their axial position relative to one another, the ball cage (41) being axially displaceable relative to the sleeve (11) between two axial stops; and

at least one rolling member (32, 33, 34) held in the ball cage (41) and radially pretensioned between the sleeve (11) and journal (21) such that it is substantially free from circumferential forces during the transmission of torque.

2. A unit according to claim 1 wherein the rolling members (32, 33, 34) are balls, barrel-type members or discs.

3. A unit according to claim 1 wherein the rolling members (33, 34) are arranged in a groove (17, 18, 28) in at least one of the journal (21) or sleeve (11).

4. A longitudinal displacement unit for a torque transmitting shaft assembly comprising:

a profiled sleeve (11) with circumferentially distributed, longitudinally extending first ball grooves (12);

a profiled journal (21) with circumferentially distributed, longitudinally extending second ball grooves (22);

torque-transmitting balls (31) which are arranged as groups in pairs of first and second ball grooves (11, 22);

a ball cage (41) positioned between the profiled sleeve (11) and the profiled journal (21) and fixing the balls (31) in their axial position relative to one another, wherein the ball cage (41) is axially displaceable relative to the profiled sleeve (11) between two axial stops (42, 44); and

a plurality of rolling members (32, 33, 34) held in the ball cage (41), so as to be able to roll, and which are radially pretensioned between the profiled sleeve (11) and the profiled journal (21), and which, during the transmission of torque, remain substantially free from circumferential forces.

5. A unit according to claim 4, wherein the rolling members (32, 33, 34) are arranged in rows between the pairs of first and second ball grooves (12, 22).

6. A unit according to claim 5, wherein the rolling members (32, 33, 34) are balls, barrel-type members or discs.

7. A unit according to claim 4, wherein the rolling members (33, 34) are arranged in additional grooves (17, 18, 28) in at least one of the profiled journal (21) or profiled sleeve (11).

8. A unit according to claim 7, wherein the rolling members (33) are balls or barrel-type members whose effective rolling

surface radius of curvature is smaller than the radius of curvature of the additional grooves (17) in a cross-sectional view.

9. A unit according to claim 7, wherein the rolling members (34) are discs which are held in the ball cage (41) with an oscillating axis of rotation.

10. A unit according to claim 9, wherein the additional grooves (18, 28) have a circular cross-section.

11. A unit according to claim 10, wherein the grooves (18, 28) have the same cross-sectional shape as the pairs of first and second grooves (12, 22) for the torque-transmitting balls (31).

12. A unit according to claim 4, wherein the rolling members comprises an elastic material.

13. A unit according to claim 12, wherein the ball cage (41) comprises an elastic material.

14. A unit according to claim 12, wherein the elasticity of the rolling members is substantially greater than the elasticity of the torque-transmitting balls (31).

15. A unit according to claim 4, wherein a rolling member (32, 33, 34) is provided between adjacent balls in a group of torque transmitting balls (31).

16. A unit according to claim 4, wherein a rolling member (32, 33, 34) is provided between each torque-transmitting ball (31) in a group of torque-transmitting balls (31).

17. A unit according to claim 4, wherein at last one rolling member (32, 33, 34) is provided in at least one group of torque transmitting balls (31).

18. A driveshaft for vehicle comprising a first rotary joint, a second rotary joint, and a longitudinal displacement unit therebetween, wherein the longitudinal displacement unit is a unit according to claim 4.

19. A driveshaft according to claim 18 wherein at least one of the first and second joints is a constant velocity universal joint.

20. A method of securing a ball cage in a longitudinal displacement unit for a torque-transmitting shaft comprising:

providing a sleeve;

providing a journal coaxially within the sleeve;

providing a plurality of torque transmitting balls acting between the sleeve and the journal;

fixing the balls in an axial position relative to one another with a ball cage, the ball cage being axially displaceable relative to the sleeve between two stops;

attaching at least one rolling member to the ball cage; and

radially pretensioning the at least one rolling member between the journal and the sleeve to increase the sliding friction of the ball cage with respect to the journal and sleeve, wherein the at least one rolling

member is substantially free from circumferential forces during the transmission of torque.